UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 0 2 2018

Mr. Jonathan Stanton
Director
Jefferson County Department of Health
1400 6th Avenue South
Birmingham, Alabama 35233

Dear Mr. Stanton:

Thank you for submitting the Jefferson County Department of Health 2018 Ambient Air Monitoring Network Plan (Network Plan) dated July 6, 2018. The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10.

The U.S. Environmental Protection Agency understands that the Jefferson County Department of Health (JCDH) provided the public a 30-day review and comment period for the Network Plan. Thank you for including the public comments received and your response to comments. The EPA has reviewed the Network Plan, public comments, and response to comments provided by the JCDH.

With this letter, the EPA is approving the JCDH's Network Plan. The EPA commends the JCDH in their early adoption of the Photochemical Assessment Monitoring Station (PAMS) monitoring requirements and understands that, while there are some implementation issues to work through, effort is already underway to have operations in place before June 1, 2019. The EPA also appreciates the JCDH partnering with the EPA to perform a hexavalent chromium study at the Wylam air monitoring site (AQS ID 01-073-2003). In addition to the above comments, we have enclosed additional feedback on your Network Plan.

Thank you for your work with us to monitor air pollution and promote healthy air quality in the Birmingham area. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or Darren Palmer at (404) 562-9052.

Sincerely,

Beverly H. Banister
Director
Air, Pesticides and Toxics Management Division

Enclosure

2018 Ambient Air Monitoring Network Plan
Jefferson County Department of Health
U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. Environmental Protection Agency comments and recommendations on the Jefferson County Department of Health's 2018 ambient air monitoring network plan (Network Plan). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O_3), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries, as defined by the U.S. Office of Management and Budget's (OMB) July 1, 2017, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O_3, $PM_{2.5}$, and PM_{10}, only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs containing an urban core of a population greater than 50,000. The OMB currently defines 13 MSAs in the state of Alabama. These MSAs and the respective July 1, 2017, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 1, 2017 Population Estimates

MSA Name	Population
Anniston-Oxford-Jacksonville, AL	114,728
Auburn-Opelika, AL	161,604
Birmingham-Hoover, AL	1,149,807
Columbus, GA-AL	303,811
Daphne-Fairhope-Foley, AL	212,628
Decatur, AL	151,867
Dothan, AL	147,914
Florence-Muscle Shoals, AL	147,038
Gadsden, AL	102,755
Huntsville, AL	455,448
Mobile, AL	413,955
Montgomery, AL	373,903
Tuscaloosa, AL	242,799

Proposed Monitoring Network Changes

There are three primary quality assurance organizations (PQAO) in the state of Alabama with the responsibility of maintaining an adequate ambient air monitoring network: the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health (JCDH), and the Huntsville Department of Natural Resources and Environmental Management (HDNREM). This review focuses on the JCDH's ambient air monitoring network.

In the response to the Network Plan and Network Plan Addendum submitted by the JCDH in 2017, the EPA approved several changes to the monitoring network that have since been implemented. These changes are summarized in Table 2 below.

Table 2: EPA Approved Changes from 2017 Network Plan & Network Plan Addendum

Agency	AQS Site ID	Pollutant	Monitor Type[1]	Action Taken
JCDH	01-073-2006	O_3	SLAMS	O_3 monitoring discontinued.
	01-073-2003	PM_{10}	SLAMS	Discontinued manual and collocated PM_{10} monitors. Continuous PM_{10} sampling ongoing.

[1] SLAMS = State and Local Air Monitoring Station, SPM = Special Purpose Monitor

We appreciate the JCDH reporting both continuous PM_{10} and $PM_{2.5}$ measurements from its Shuttlesworth site (AQS ID 01-073-6004) to the EPA's AirNow Tech database. While the $PM_{2.5}$ measurements are made utilizing a non-regulatory method, the data are useful in informing the EPA, the JCDH, and the local community about the general levels of $PM_{2.5}$ in the immediate vicinity of the ERP Compliant Coke facility (formerly Walter Energy). Moving forward, the JCDH is encouraged to report all available special purpose monitor (SPM) continuous $PM_{2.5}$ concentration and associated quality assurance data collected at the Shuttlesworth site to the EPA's Air Quality System (AQS).

Proposed monitoring network changes are found on Page 6 of the Network Plan (see Table 3).

Table 3: Proposed Changes in the 2018 Network Plan

Agency	AQS Site ID	Pollutant	Monitor Type	Action Taken	EPA Comments
JCDH	01-073-2006	$PM_{2.5}$ TEOM	SLAMS	Shutdown	Approved

The JCDH requested to shut down the $PM_{2.5}$ TEOM at the Hoover monitoring site (01-073-2006). This monitor is not regulatorily required and is therefore approved. After this monitor is shut down, the JCDH monitoring network will continue to meet the requirements of 40 CFR Part 58, Appendix D, Section 4.7.2.

In addition to the change identified in Table 3 requiring the EPA's approval, the JCDH states on Page 6 that Photochemical Assessment Monitoring Station (PAMS) monitoring will begin January 2019. We want to commend the JCDH on this plan. The EPA believes the JCDH will derive great benefit from: familiarizing staff with the operation and maintenance of the equipment; developing its PAMS quality assurance documents as early as possible, and gaining experience in the field prior to June 1 so that your program can hit the ground running. The EPA recognizes the magnitude of this effort undertaken by the JCDH to have a fully operational PAMS site by June 1, 2019, and appreciates the JCDH's early adoption of PAMS.

Public Availability of Network Plans

The EPA noted that the 2018 Network Plan does not appear to be available on the JCDH website. The plan was made available for a 30-day public comment period as required, but the EPA was unable to locate the final plan. A page on the JCDH website with a section for Network Plans only contains the 2015 Network Plan: https://jcdh.org/SitePages/Misc/AirProgReports.aspx. Previously, the JCDH's plan was incorporated into the ADEM Network Plan submitted to the EPA

and posted on the ADEM website. However, in 2018, the JCDH submitted a separate Network Plan to the EPA. Please update the JCDH website to include the 2018 Network Plan.

Air Quality Index (AQI) Reporting
40 CFR §58.50 & 40 CFR Part 58, Appendix G

AQI reporting is required for MSAs with populations over 350,000. Four MSAs in Alabama are required to report an AQI: Birmingham, Huntsville, Mobile, and Montgomery. The JCDH's Network Plan on Page 5 contains the link to the JCDH website where this information can be obtained. However, the hourly data from the SO_2 analyzer operated by the JCDH at the Shuttlesworth site (AQS ID 01-0073-6004) are not being reported to the EPA's AirNow Tech (www.airnowtech.org) database. The EPA recommends that the data from this analyzer be reported to the EPA's AirNow Tech so that the public in North Birmingham can be more informed about their air quality in near real time. Please contact us if you have any questions about reporting these data.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, Section 3.0

The state is required to have one NCore site. The NCore site must measure, at a minimum, $PM_{2.5}$ particle mass using continuous and integrated/filter-based samplers, speciated $PM_{2.5}$, $PM_{10-2.5}$ particle mass, O_3, SO_2, CO, NO/NOy, wind speed, wind direction, relative humidity, and ambient temperature. The North Birmingham site (AQS ID 01-073-0023) was approved as the state's NCore site by the EPA's Office of Air Quality Planning and Standards (OAQPS) on October 30, 2009, and meets all requirements for the state.

O_3 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

The JCDH's O_3 air monitoring network for the Birmingham MSA is listed on Page 23 of the Network Plan. The JCDH operates six sites in Jefferson County and the ADEM operates one site in Shelby County. Table 4 below lists the monitors in the approved O_3 network for the MSA. The EPA has determined that the O_3 monitoring networks outlined in the Network Plan meet the minimum requirements found in 40 CFR Part 58, Appendix D, Section 4.1 and Table D-2 for all MSAs.

Table 4. Birmingham MSA Approved O_3 Network

AGENCY	AQS SITE ID	SITE NAME
JCDH	01-073-0023	North Birmingham NCore
	01-073-1003	Fairfield
	01-073-1005	McAdory
	01-073-1010	Leeds
	01-073-5003	Corner
	01-073-6002	Tarrant
ADEM	01-117-0004	Helena

CO Monitoring Requirements
40 CFR, Part 58, Appendix D, Sections 3.0(b) and 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Sections 3.0(b) and 4.2. This section requires CBSAs with populations over one million to operate one CO monitor collocated with a near-road monitor. This requirement is met for the Birmingham CBSA by

the CO monitor at the Arkadelphia near-road site (AQS ID 01-073-2059). CO monitoring is also required for the NCore network as listed in Section 3.0(b). The CO monitor located at the Birmingham NCore site (AQS ID 01-073-0023) meets this requirement. In summary, the CO monitoring network outlined in the Network Plan meets the minimum requirements for the Birmingham CBSA.

NO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.3

Three types of NO_2 monitoring are required: near-road, area-wide, and Regional Administrator. These are described in 40 CFR Part 58, Appendix D, Sections 4.3.2, 4.3.3, and 4.4.4, respectively.

The Birmingham area is the only CBSA required to have a near-road NO_2 monitoring station in Alabama. The JCDH operates a NO_2 monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) to meet this requirement. The Arkadelphia near-road monitoring site was approved in the EPA's response to Alabama's 2013 Network Plan.

The Birmingham area is the only CBSA in Alabama required to have an area-wide NO_2 monitoring site. The JCDH operates an NO_2 monitor at the North Birmingham NCore site (AQS ID 01-073-0023) to meet this requirement.

The EPA has not identified any monitor in Jefferson County that is needed to meet the Regional Administrator NO_2 monitoring requirement. Thus, the JCDH is not deficient with this requirement. The full list of NO_2 monitors identified by the Regional Administrators can be found on the EPA's website at: http://www.epa.gov/ttnamti1/svpop.html.

All NO_2 monitoring requirements are being met in the Birmingham CBSA.

SO_2 Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO_2 are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that "[t]he population weighted emissions index (PWEI) shall be calculated by states for each core based statistical area (CBSA)." As a result, the SO_2 monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. An SO_2 monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4. The Birmingham CBSA is required to have two SO_2 monitors. The JCDH's SO_2 monitoring network consists of the monitors listed in Table 5. This network, as described in more detail in the JCDH's Network Plan, meets all design criteria of 40 CFR Part 58.

Table 5: SO_2 PWEI Monitors

CBSA	COUNTY	SITE NAME	SITE ID
Birmingham	Jefferson	North Birmingham	01-073-0023
	Jefferson	Fairfield	01-073-1003

In March 2016, the JCDH agreed to install a SO_2 monitor at the existing Shuttlesworth site (AQS ID 01-073-6004) to determine SO_2 concentrations near the coke plants. This monitor was installed and

operational on January 1, 2017. Several exceedances of the 1-hour SO_2 NAAQS have been measured since monitoring began. As a result, per an agreement between the JCDH and the EPA, the JCDH will operate the Shuttlesworth SO_2 monitor for three years to collect data for a complete design value (2017-2019). After a complete design value is calculated, the EPA along with the JCDH will evaluate all information to help determine the next steps.

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.5

Forty (40) CFR Part 58, Appendix D, Section 4.5 requires that "[a]t a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year..." No sources have been identified in Jefferson County that exceed either of these thresholds. Therefore, this requirement does not apply to the JCDH.

PM_{10} Monitoring Requirements
40 CFR Part 58, Appendix A, 3.3
40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Region 4 has determined that the PM_{10} monitoring network described on Pages 15, 26, and 27 of the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-4 for the Birmingham MSA. The collocation requirements for manual PM_{10} monitors are also being met for this area with the collocated manual sampler located at the North Birmingham NCore site (AQS ID 01-073-0023). Collocation requirements apply to each PQAO and are based on the manual sampling methods employed.

$PM_{2.5}$ Monitoring Requirements
40 CFR Part 58, Appendix A, 3.2.3
40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Region 4 has determined that the $PM_{2.5}$ monitoring network described on Pages 26-30 of the Network Plan meets or exceeds the minimum requirements found in 40 CFR Part 58, Appendix D, Table D-5 for the Birmingham MSA. The $PM_{2.5}$ collocation requirement found in 40 CFR Part 58, Appendix A, 3.2.3.2 for manual reference and equivalent methods is also being met. Collocation requirements apply to each PQAO and are based on the sampling methods employed. The collocated manual sampler at the NCore site should operate on a 1-in-3 day schedule per 40 CFR §58.12(d)(2). This change should be made by or on January 1, 2019. The EPA understands the JCDH may be evaluating a Teledyne 640x sampler at the NCore site. This instrument may help reduce some of the collocated sampling burden for both $PM_{2.5}$ and PM_{10}. The EPA Region 4 air monitoring staff would be happy to discuss any changes to your operations as you consider the possible switch to a continuous sampler, like the Teledyne 640x, as a primary sampler in your network.

$PM_{2.5}$ Near-road Monitoring Requirement
40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.7.1(b)(2) require that "CBSAs with a population of 1,000,000 or more persons, at least one $PM_{2.5}$ monitor is to be collocated at a near-road

NO_2 station." The $PM_{2.5}$ monitor at the Arkadelphia near-road site (AQS ID 01-073-2059) in Birmingham fulfills this requirement.

$PM_{2.5}$ Continuous Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.7.2

Regulatory provisions for continuous $PM_{2.5}$ monitoring require that "[t]he state, or where appropriate, local agencies must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM, Federal Equivalent Method (FEM), Approved Regional Method (ARM) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies." Based on the information provided on Pages 28-29 in the Network Plan, Region 4 has determined that the $PM_{2.5}$ continuous monitoring network meets or exceeds the minimum monitoring requirements in the Birmingham MSA.

$PM_{2.5}$ Background and Transport Sites
40 CFR Part 58, Appendix D, Section 4.7.3

Forty (40) CFR Part 58, Appendix D, Section 4.7.3 requires that "[e]ach state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background levels and at least one $PM_{2.5}$ site to monitor for regional transport." This requirement is being met by the sites identified in the ADEM's 2018 Network Plan. The Crossville site (AQS ID 01-149-1003) in Dekalb County is a rural background site and the Ashland site (AQS ID 01-027-0001) in Clay County is a regional transport site. Regulatory FRM monitors are operated at these two sites. No additional requirements apply for the JCDH.

$PM_{2.5}$ Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, Section 4.7.4

The JCDH operates and maintains two EPA funded $PM_{2.5}$ speciation sites. The primary speciation site is located at the North Birmingham NCore site (AQS ID 01-073-0023). The JCDH also operates a supplemental speciation site located in the Wylam community (AQS ID 01-073-2003). These sites meet the CSN requirement.

Photochemical Assessment Monitoring Station (PAMS)
40 CFR Part 58, Appendix D, Section 5.0

With the promulgation of a revised O_3 NAAQS on October 1, 2015, the EPA finalized changes to the PAMS program. By June 1, 2019, the JCDH will be required to implement PAMS monitoring at its NCore site in Birmingham. While the EPA recognizes there are several implementation challenges to work through, we will work closely with the JCDH to minimize the burden of implementing this new monitoring program. The EPA understands that work has begun installing the necessary equipment at the North Birmingham NCore site and that the JCDH will be adopting the national PAMS quality assurance project plan and standard operating procedures being developed by Battelle in coordination with the EPA's Office of Air Quality Planning & Standards. This requirement is expected to be met by the implementation date.

Other Comments

In several instances, the Network Plan lists the monitoring objective for pollutants as "Other." This objective is vague and could use some refinement. Also, the measurement scales for some pollutants may no longer be appropriate and should be reevaluated. The EPA recommends that the JCDH reevaluate the monitoring objectives and measurement scales listed for all monitors in its network. At a minimum, we encourage JCDH to conduct this reevaluation during development of its required 5-year Network Assessment due by July 1, 2020. The EPA Region 4 air monitoring staff would be happy to discuss the reevaluation process with JCDH staff.

The EPA appreciates the JCDH partnering with us to conduct a hexavalent chromium study at the Wylam air monitoring site (AQS ID 01-073-2003). Monitoring began in April 2018 and is scheduled to continue through March 2019.